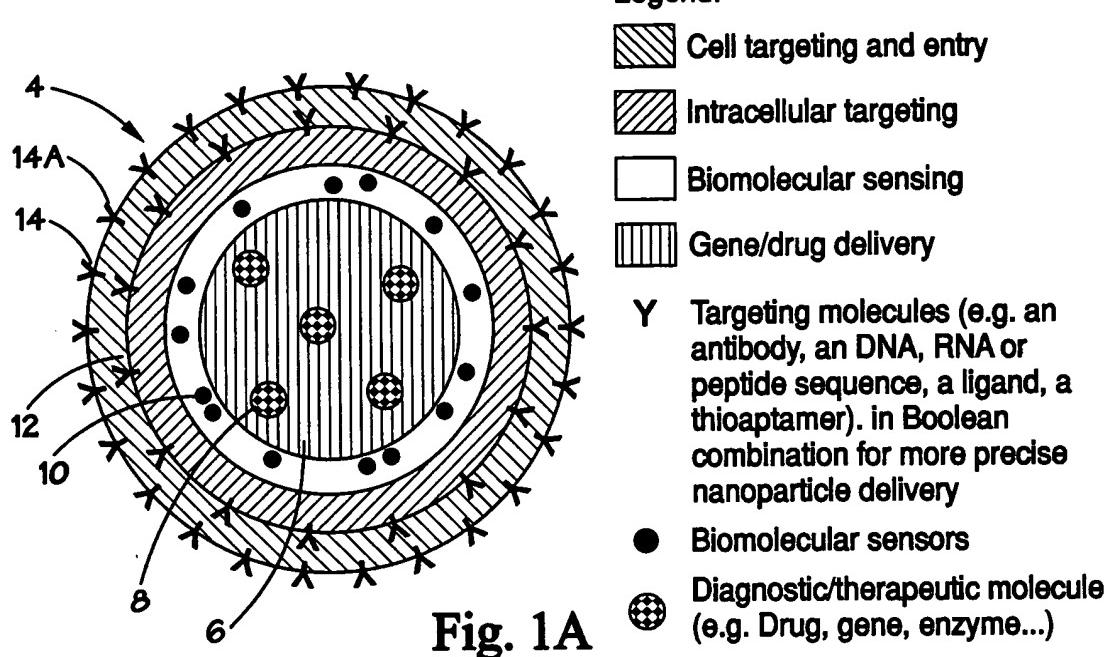


**Smart Boolean Targeted, Programmed Sequence of Events,
Multilayered Nanomedicine Systems with Biomolecular Sensors
for Feedback Control of Gene/Drug Delivery within Single Cells**



**Development of Nanoparticle Delivery
Systems for Drug/Gene Delivery**

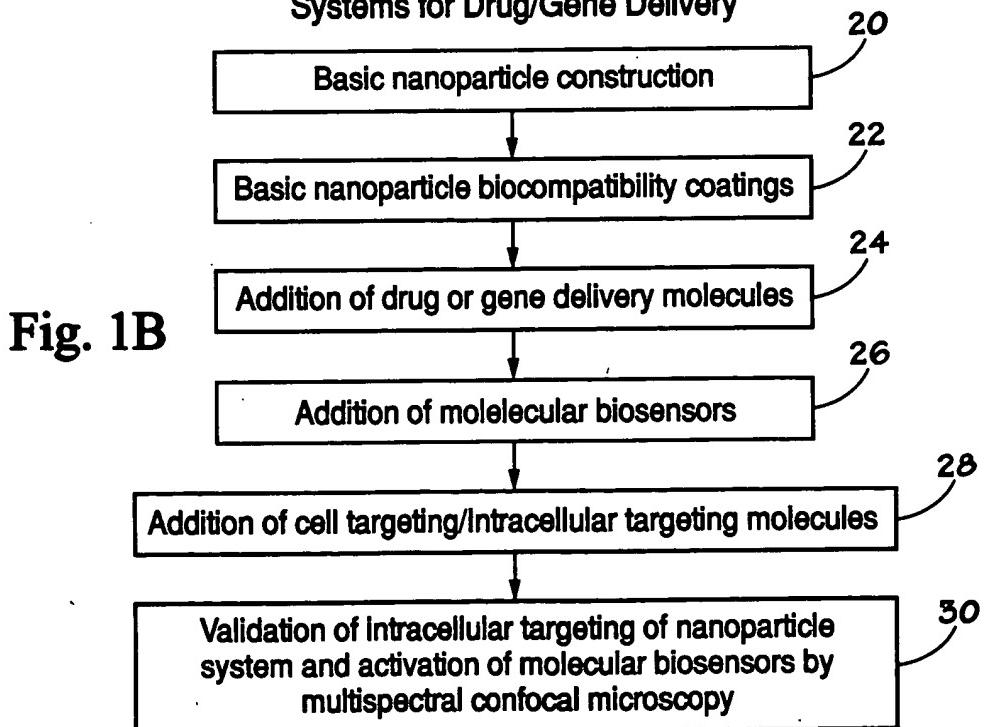




Fig. 1D

Fig. 1E

Fig. 1F

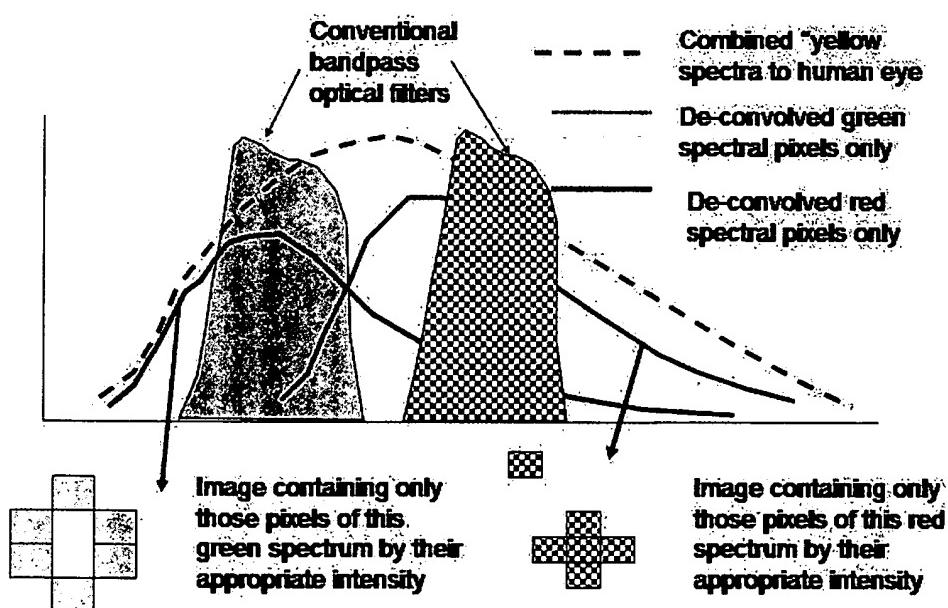


Fig. 2

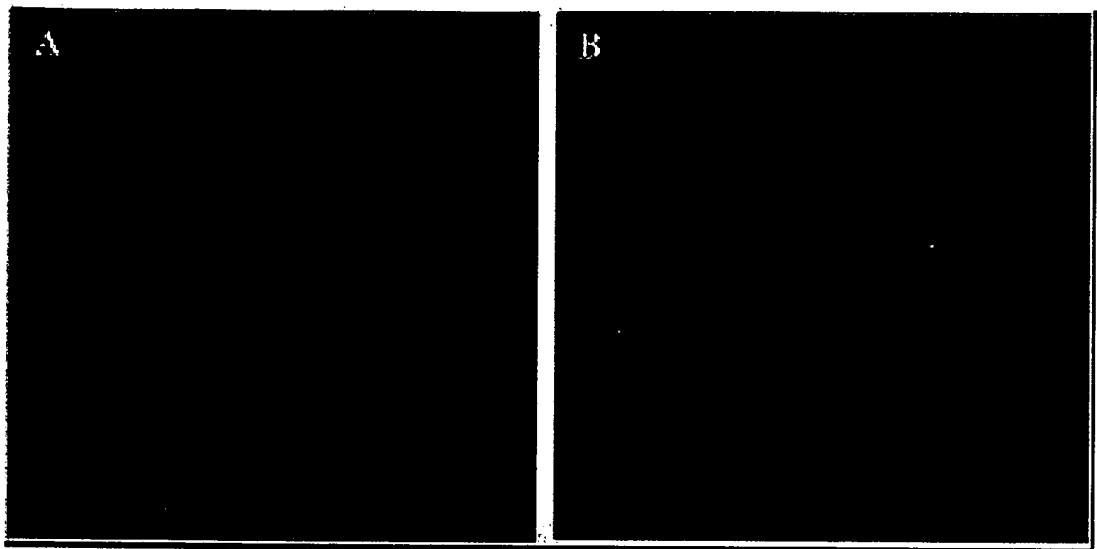


Fig. 3A

Fig. 3B

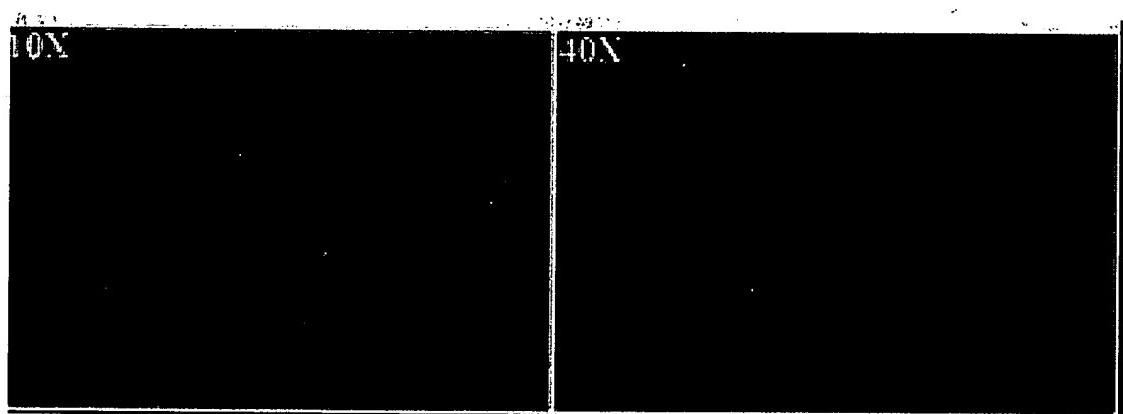


Fig. 4A

Fig. 4B

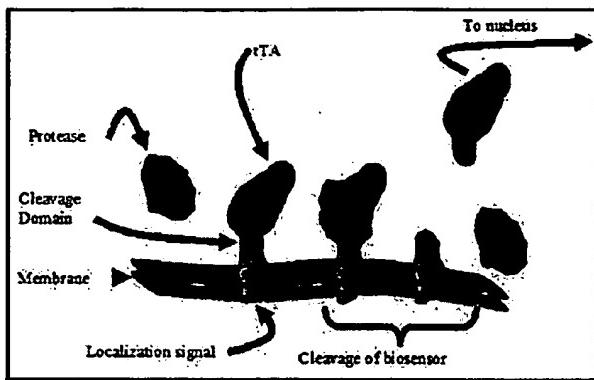


Fig. 5

Targeted Biosensors for Anti-HCV Treatment

- Sub-cellular target:** Nucleus ER Membranes
- Gene arrangement:**

(TMD = trans-membrane domain; CD = cleavage domain; tTA = trans-activator; Sig = ER targeting signal).
- Confocal microscopy data:**

Fig. 6A

Fig. 6B

Fig. 6C

BT72H cells were counterstained with DAPI and immunostained with a primary antibody against the VP16 region of the tTA and a secondary antibody conjugated with PE.

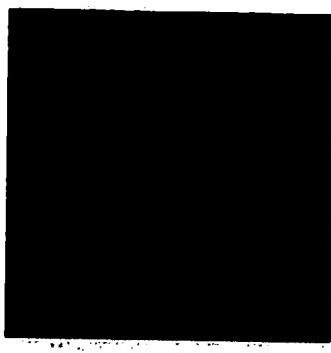


Fig. 7A

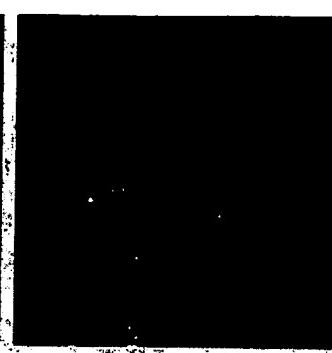


Fig. 7B

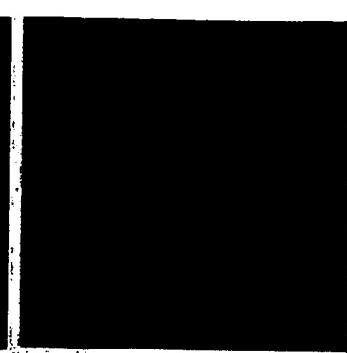


Fig. 7C

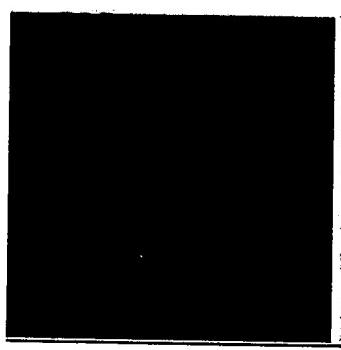


Fig. 7D

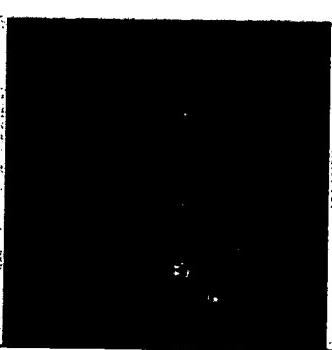


Fig. 7E



Fig. 7F

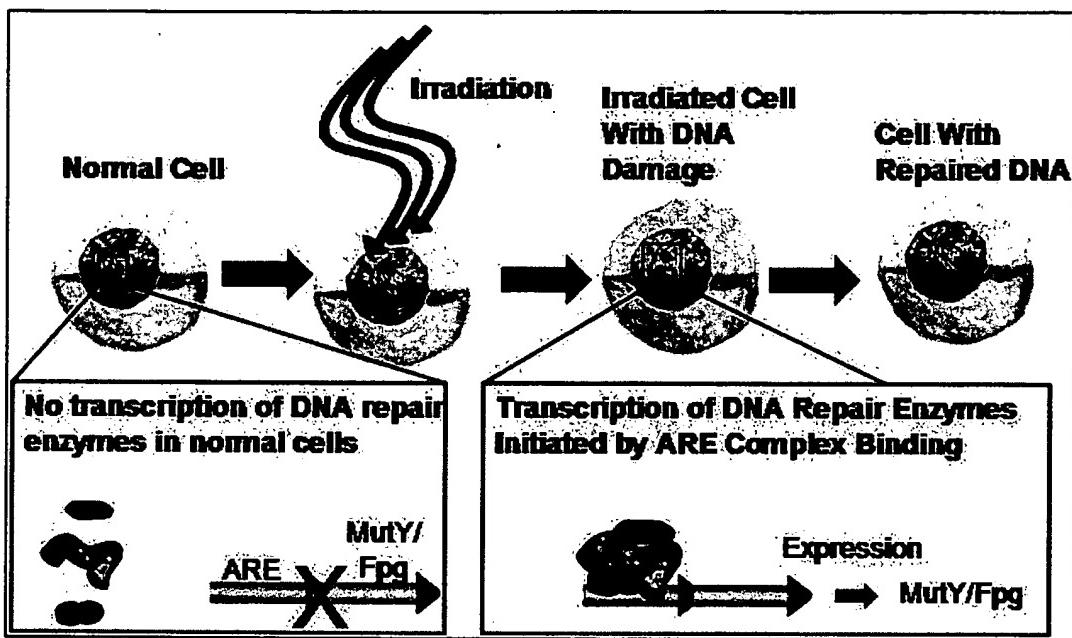


Fig. 8

ROS Activated Biosensor in Living Human Cells

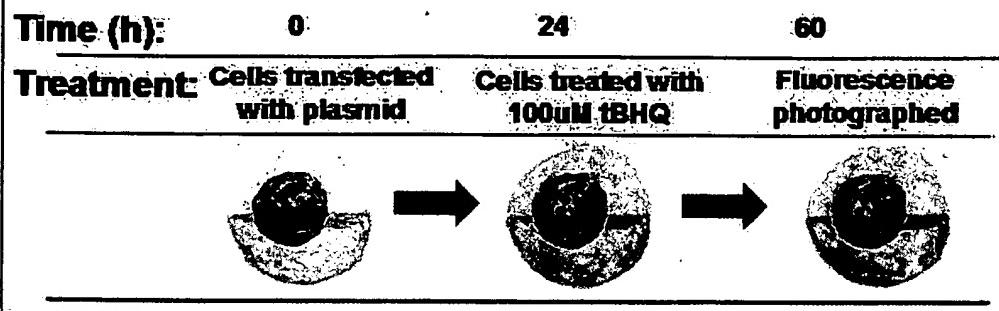


Fig. 9A

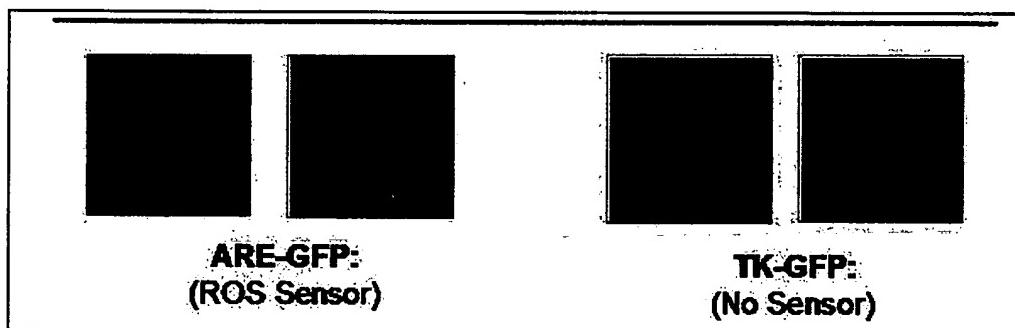


Fig. 9B

Fig. 9C

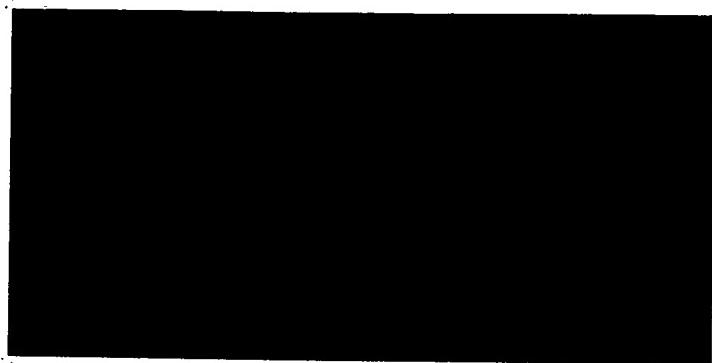


Fig. 10A

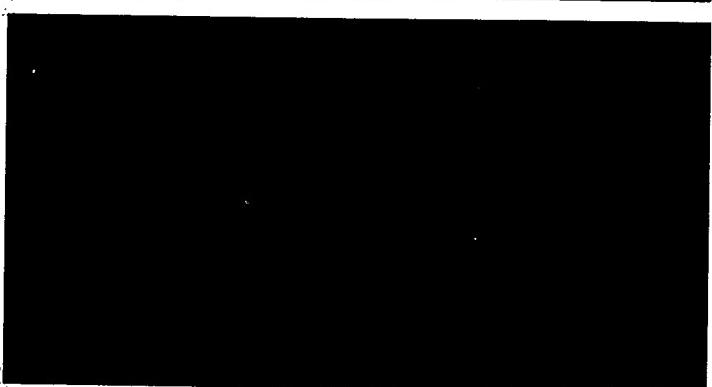


Fig. 10B

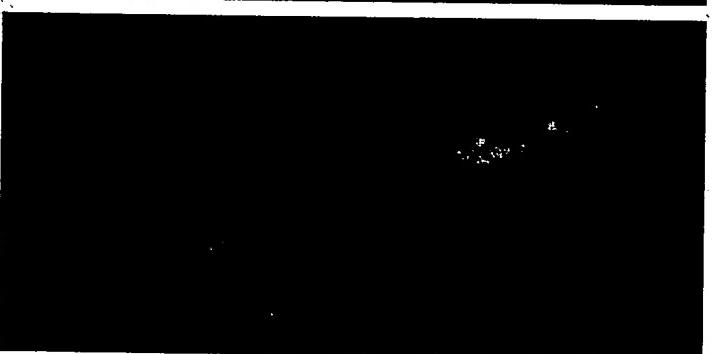


Fig. 10C

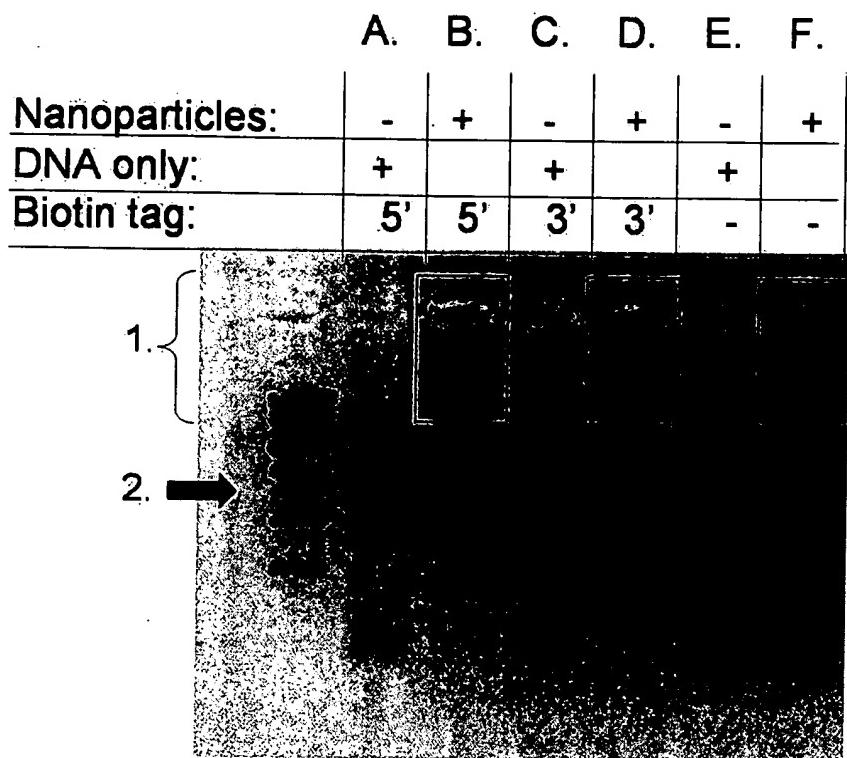


Fig. 11

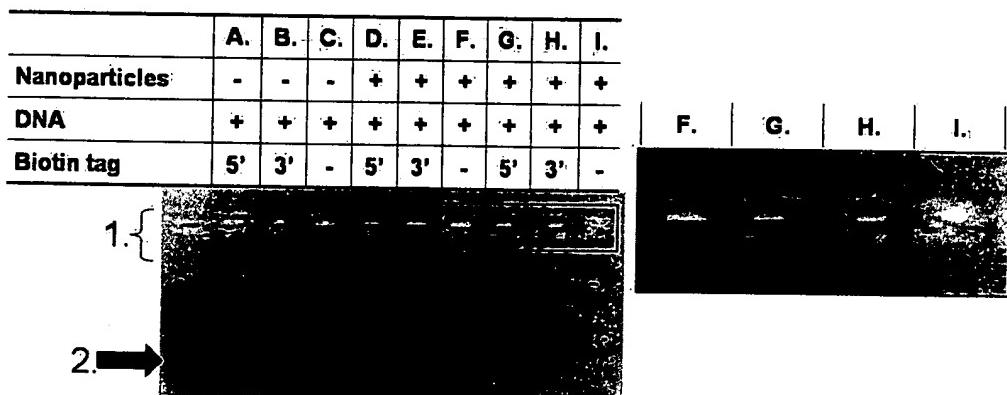


Fig. 12

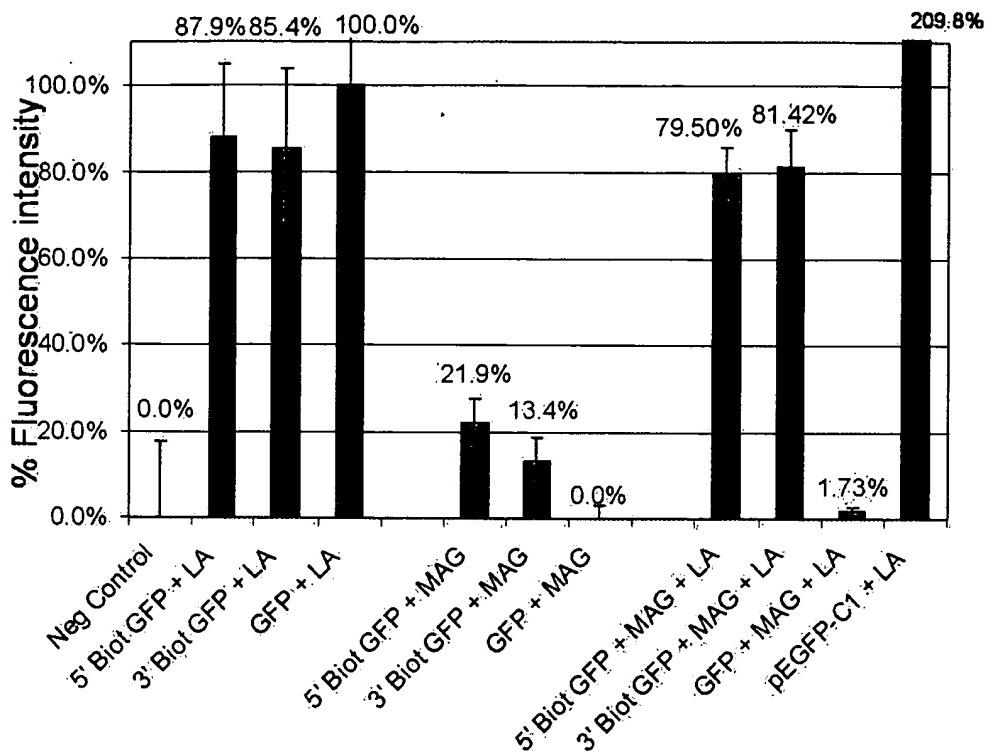


Fig. 13

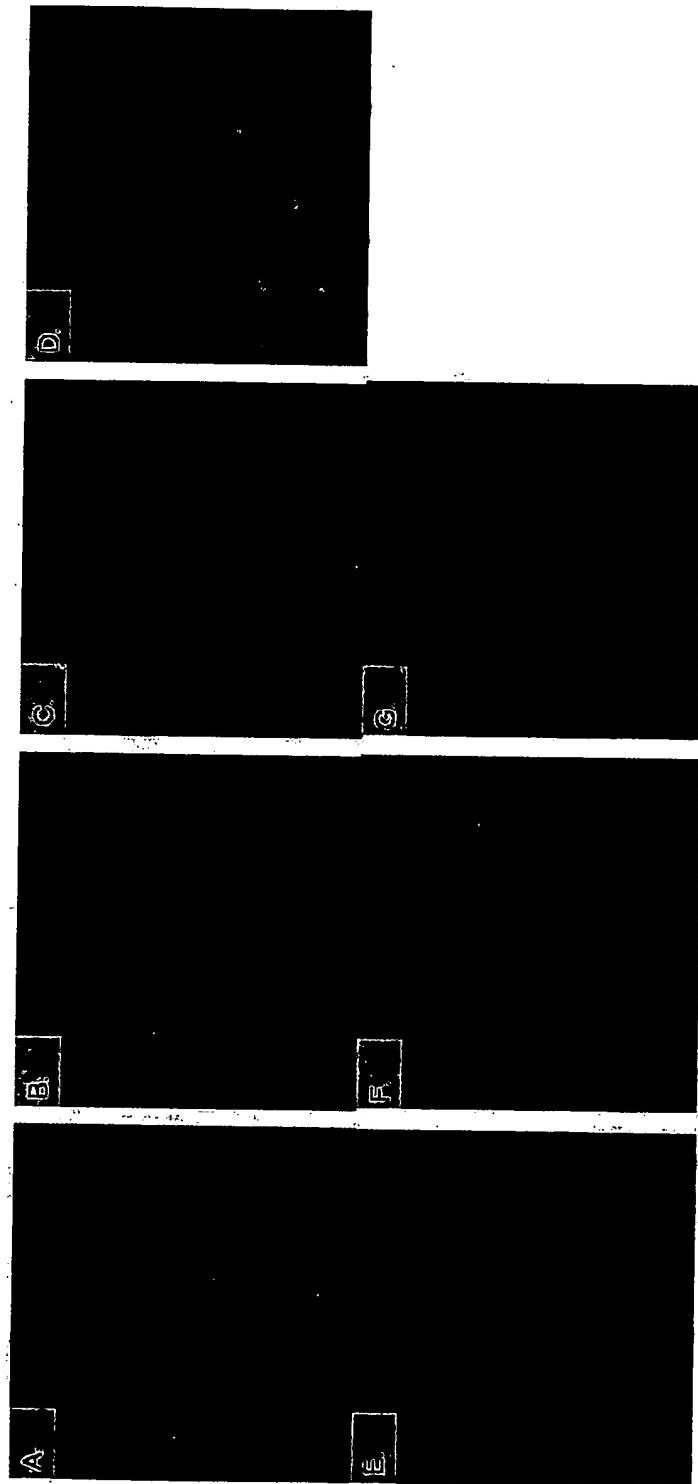


Fig. 14

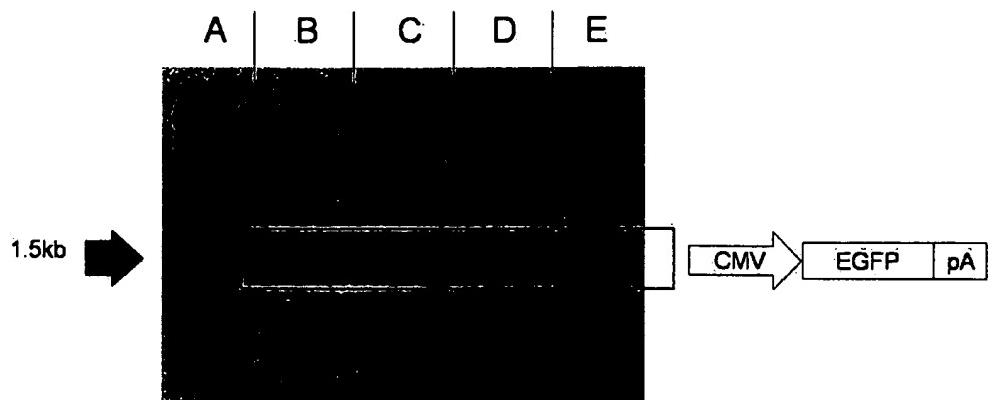


Fig. 15



Fig. 16

Hepatitis C Virus

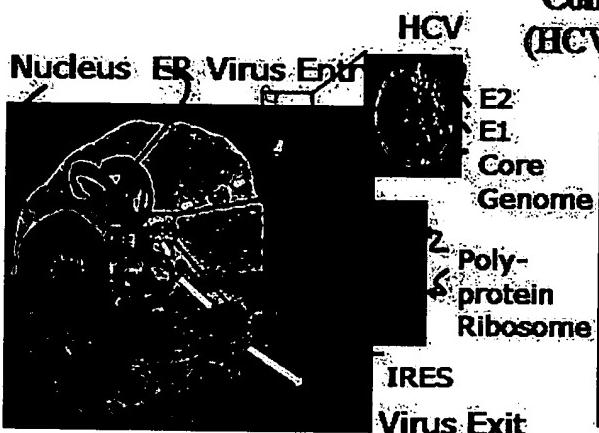


Fig. 17A

Antiviral nanomedicine

Construct an “artificial virus”
(HCV-like) nanoparticle system

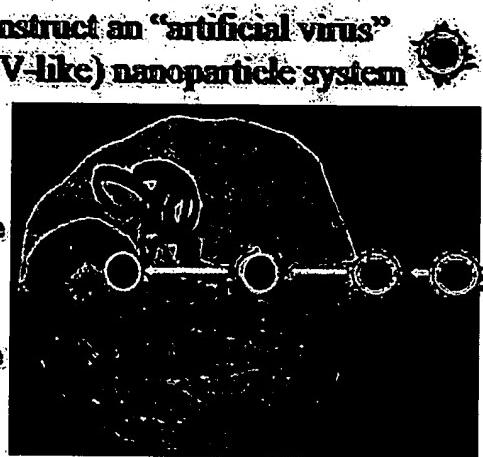


Fig. 17B

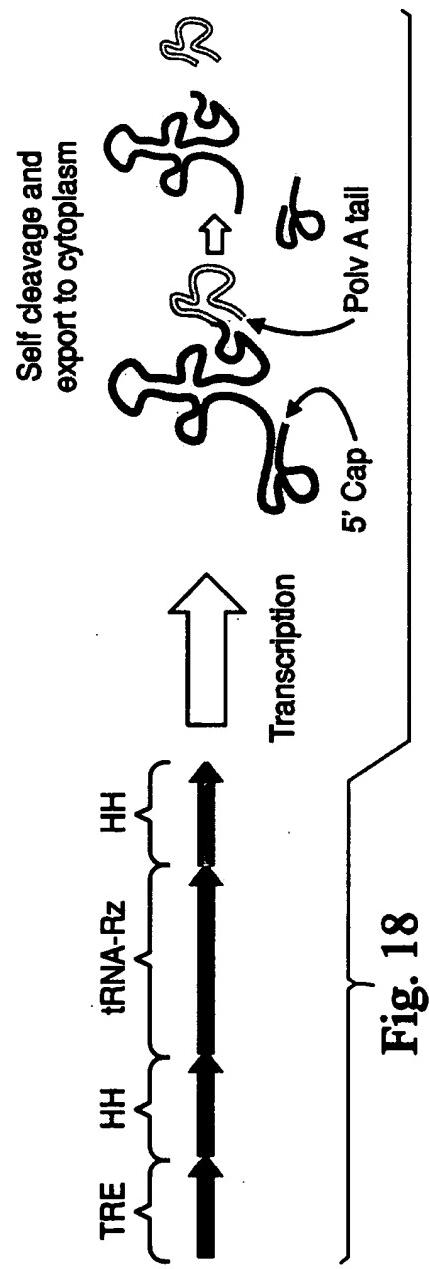


Fig. 18

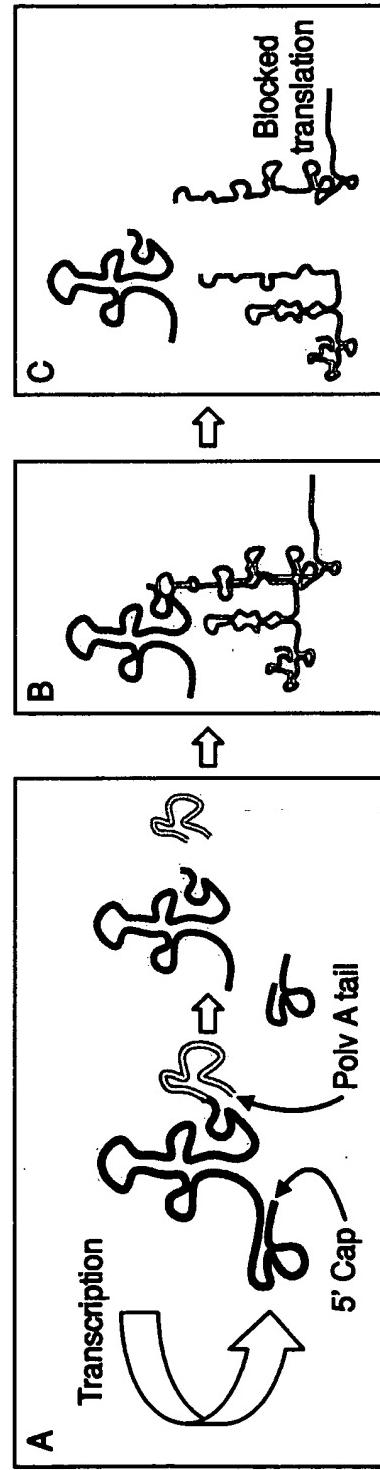


Fig. 18A

Fig. 18B

Fig. 18C

Fig. 19A

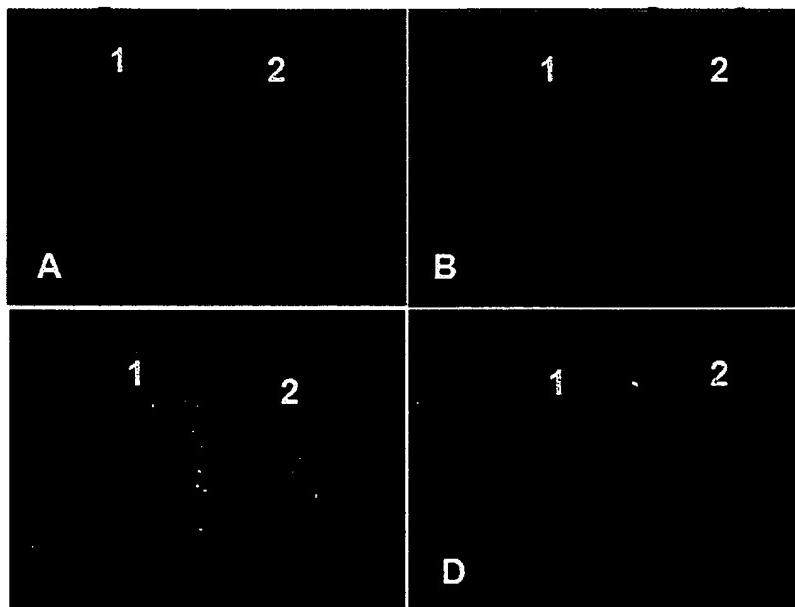


Fig. 19B

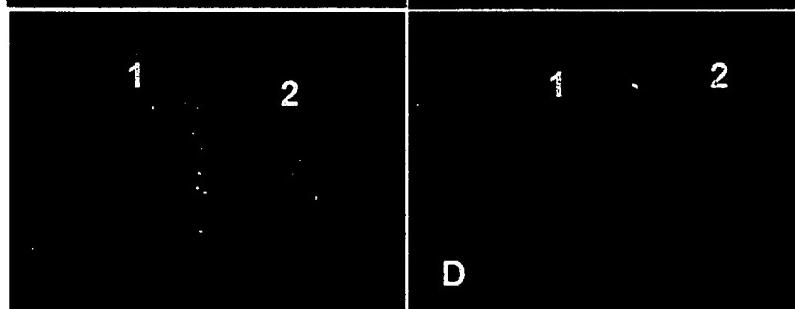


Fig. 19C

Fig. 19D

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